



Express Mail No. EV 687 639 351 US

**SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT**

Address to:  
Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attorney Docket	AREN-027
First Named Inventor	Adams, John W.
Application Number	10/523,100
Filing Date	January 31, 2005
Group Art Unit	1646
Examiner Name	Li, Ruixiang
Title:	<i>"HUMAN G PROTEIN-COUPLED RECEPTOR AND MODULATORS THEREOF FOR THE TREATMENT OF ISCHEMIC HEART DISEASE AND CONGESTIVE HEART FAILURE"</i>

Sir:

This is an Information Disclosure Statement submitted for the Examiner's consideration. This is being filed *after* three months of the filing date of this national application or the date of entry of the national stage as set forth in §1.491 in an international application or *after* the mailing date of the first Office Action on the merits, whichever event occurred last, but *before* the mailing date of either a final action under §1.113 or a notice of allowance under §1.311, whichever occurs first.

A Form PTO-SB/08A listing the references accompanies this paper. Applicants would appreciate the Examiner's initialing and returning the form to indicate that the references have been reviewed and made of record.

- ☒ All of the references identified herein are being submitted prior to the final determination on patentability by the Office.
- ☐ All of the references identified herein were cited in an International (PCT) Search Report dated \*, in a PCT application corresponding to the above-identified U.S. application. A copy of the Search Report, including an indication of the purported relevance of the cited documents, is enclosed herewith. Copies of the references are submitted herewith.
- ☐ All of the references identified herein were disclosed in parent application Serial No. US03/23296 and, as such, copies thereof are not included pursuant to the provisions of 37 C.F.R. §1.98(d), except if noted below:

This Information Disclosure Statement is not intended as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any one of the above references constitutes prior art to the present application within the meaning of 35 U.S.C. §102.

06/13/2007 BABRAHA1 00000001 10523100

02 FC:1806

180.00 DP

- ☒ Please charge the \$180.00 fee required by 37 C.F.R. §1.97(c) and set forth in 37 C.F.R. 1.17(p) and any additional fees which may be required by this paper or any fees under 37 C.F.R. §§ 1.16,

1.17 and 1.21, or to credit any overpayment, to Deposit Account No. 50-0815, order number AREN-027.

Respectfully submitted,

BOZICEVIC, FIELD & FRANCIS LLP

Date: June 8, 2007

By: 

James S. Keddie, Ph.D.

Registration No. 48,920

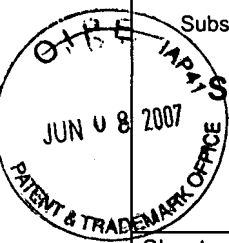
BOZICEVIC, FIELD & FRANCIS LLP  
1900 University Avenue, Suite 200  
East Palo Alto, California 94303  
Telephone: (650) 327-3400  
Facsimile: (650) 327-3231

Please type a plus sign (+) inside this box ☐

PTO/SB/8A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449A/PTO

# **SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

**Complete if Known**

Application Number	10/523,100
Filing Date	January 31, 2005
First Named Inventor	John W. Adams
Group Art Unit	1646
Examiner Name	LI, Ruixiang
Attorney Docket Number	RIGL-027

Sheet 1 of 4

## **U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1					
	A2					
	A3					
	A4					

## **FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup> (if known)	Kind Code <sup>2</sup>				
	B1	WO	2007/047520	A1	Chen W. LIAW	04-26-2007		
	B2	WO	2004/013285	A2	ADAMS et al.	02-12-2004		
	B3							
	B4							
	B5							
	B6							
	B7							
	B8							

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/523,100
				Filing Date	January 31, 2005
				First Named Inventor	John W. Adams
				Group Art Unit	1646
				Examiner Name	LI, Ruixiang
Sheet	2	of	4	Attorney Docket Number	RIGL-027

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	C1	PALCZEWSKI et al., "Crystal structure of rhodopsin: A G protein-coupled receptor", Science 2000 289:739-45.	
	C2	SHIN N et al., Molecular modeling and site-specific mutagenesis of the histamine-binding site of the histamine H4 receptor. Mol Pharmacol. 2002 62:38-47.	
	C3	CHUNG DA et al., "Mutagenesis and peptide analysis of the DRY motif in the alpha2A adrenergic receptor: evidence for alternate mechanisms in G protein-coupled receptor" Biochem Biophys Res Commun. 2002 293:1233-41.	
	C4	MOULEDOUS et al., "Functional inactivation of the nociceptin receptor by alanine substitution of glutamine 286 at the C terminus of transmembrane segment VI: evidence from a site-directed mutagenesis study of the ORL1 receptor transmembrane-binding domain" Mol Pharmacol. 2000 57:495-502.	
	C5	KRASNOPEROV et al., "Structural requirements for alpha-latrotoxin binding and alpha-latrotoxin-stimulated secretion. A study with calcium-independent receptor of alpha-latrotoxin (CIRL) deletion mutants" J Biol Chem. 1999 274:3590-6.	
	C6	HURLEY et al., "Structure-function studies of the eighth hydrophobic domain of a serotonin receptor" J Neurochem. 1999 72:413-21	
	C7	AKAL-STRADER et al., Residues in the first extracellular loop of a G protein-coupled receptor play a role in signal transduction. J Biol Chem. 2002 277:30581-90.	
	C8	YANG et al., "Molecular determinants of human melanocortin-4 receptor responsible for antagonist SHU9119 selective activity" J Biol Chem. 2002 277:20328-35	
	C9	ULLOA-AGUIRRE et al., "Structure-activity relationships of G protein-coupled receptors" Arch Med Res. 1999 30:420-35 (Review)	
	C10	CHOLLET et al., "Biophysical approaches to G protein-coupled receptors: structure, function and dynamics" J Comput Aided Mol Des. 1999 13:209-19 (Review)	
Examiner Signature			Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box ☐

PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO  <b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/523,100
				Filing Date	January 31, 2005
				First Named Inventor	John W. Adams
				Group Art Unit	1646
				Examiner Name	LI, Ruixiang
Sheet	3	of	4	Attorney Docket Number	RIGL-027

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

	C11	GIMPL et al., "The oxytocin receptor system: structure, function, and regulation," <i>Physiol Rev.</i> 2001 81:629-83 (Review)	
	C12	BAI et al., "Structure and function of the extracellular calcium-sensing receptor," <i>Int J Mol Med.</i> 1999 4:115-25 (Review)	
	C13	OLAH et al., "The role of receptor structure in determining adenosine receptor activity," <i>Pharmacol Ther.</i> 2000 85:55-75 (Review)	
	C14	MISSALE et al., "Dopamine receptors: from structure to function," <i>Physiol Rev.</i> 1998 78:189-225 (Review)	
	C15	SEALFON et al., "Functional domains of the gonadotropin-releasing hormone receptor," <i>Cell Mol Neurobiol.</i> 1995 15:25-42 (Review)	
	C16	FILIZOLA et al., "BUNDLE: a program for building the transmembrane domains of G-protein-coupled receptors," <i>J Comput Aided Mol Des.</i> 1998 12:111-8.	
	C17	ORRY et al., "Modeling and docking the endothelin G-protein-coupled receptor," <i>Biophys J.</i> 2000 79:3083-94.	
	C18	CALIFANO, "SPLASH: structural pattern localization analysis by sequential histograms," <i>Bioinformatics.</i> 2000 16:341-57.	
	C19	GOULDSON et al., "Domain swapping in G-protein coupled receptor dimmers," <i>Protein Eng.</i> 1998 11:1181-93.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231.  
DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO  <b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/523,100
				Filing Date	January 31, 2005
				First Named Inventor	John W. Adams
				Group Art Unit	1646
				Examiner Name	LI, Ruixiang
Sheet	4	of	4	Attorney Docket Number	RIGL-027

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	C20	GOULDSON et al., "Dimerization and domain swapping in G-protein-coupled receptors: a computational study," Neuropsychopharmacology. 2000 23:S60-77.	
	C21	CHEN et al., "Alterations of gene expression in failing myocardium following left ventricular assist device support"	
	C22	BIALIK et al., "The Mitochondrial Apoptotic Pathway is Activated by Serum and Glucose Deprivation in Cardiac Myocytes," Circulation Research 1999:403-414	
	C23	BONAVITA et al., "H9c2 cardiac myoblasts undergo apoptosis in a model of ischemia consisting of serum deprivation and hypoxia: inhibition by PMA," FEBS Letters 2003:85-91	
	C24	ROSS, "Pharmacodynamics Mechanisms of Drug Action and the Relationship Between Drug Concentration and Effect," Goodman & Gilman's The Pharmacological Basis of Therapeutics 1996: 29-30	
	C25	LAUGHWITZ et al., "Blocking Caspase-Activated Apoptosis Improves Contractility in Failing Myocardium," Human Gene Therapy, 2001: 2051-2056	
	C26	KATZ et al., "Heart Failure Pathophysiology, Molecular Biology and Clinical Management," 2000: xiii-3	
	C27	LEE et al., "Insulin Like Growth Factor I Improves Cardiovascular Function and Suppresses Apoptosis of Cardiomyocytes in Dilated Cardiomyopathy," Endocrinology 1999: 4831-4840	
	C28	ADAMS et al., "G-Proteins in growth and apoptosis: lessons from the heart," Oncogene 2001:1626-1634	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.